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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,401	07/27/2006	Toyoyasu Tadokoro	050070-0114	7173

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EXAMINER	
HINES, ANNE M	

ART UNIT	PAPER NUMBER
2879	

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11/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,401	TADOKORO ET AL.	
	Examiner	Art Unit	
	ANNE M. HINES	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 30, 2009 has been entered.

Claims 1-10 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6447934) (of record) in view of Hamada et al. (US 6387546) (of record) and Eida (WO 2001/67824). Note that for purposes of citation, English language counterpart US 6995736 will be used.

Regarding claim 1, Suzuki teaches an organic EL panel comprising a light-transmitting supporting substrate having formed thereon an organic EL device comprising an organic layer having at least a luminescent layer (Fig. 1, 4; Column 4,

lines 46-64), sandwiched with a pair of electrodes (Fig. 1, 2 & 6; Column 4, lines 46-64) characterized in that the luminescent layer comprises a blue host material of a transport material having added thereto a fluorescent material as a guest material (Column 5, lines 1-34). Suzuki fails to teach wherein a transport material added to the host as a guest material and wherein the host material of the luminescent layer comprises distyryl arylene or derivatives thereof and has a glass transition temperature of 85°C or higher.

In the same field of endeavor, Hamada teaches an OLED device with a layer including a host transport material with another transport material added to the host as a guest material in order to provide a layer with superior film stability and transport properties (Column 3, lines 58-67; Column 4, lines 32-48).

In the same field of endeavor, Eida teaches a blue host material of a transport material for and OLED that has a distyryl arylene skeleton as a suitable blue emitting host material for a luminescent layer with dopants (Column 8, lines 44-54).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the invention of Suzuki by having a transport material added to the host as a guest material in order to provide a layer with superior film stability and transport properties, as disclosed by Hamada, and to further have the blue emitting host material with transporting properties for the host of the luminescent layer have a distyryl arylene skeleton, as disclosed by Eida, since it would have been obvious to one of ordinary skill in the art to use another blue emitting, hole transporting host material for the luminescent layer.

Regarding claim 2, Hamada further teaches wherein the transport material doped into the layer is rubrene (Column 22, lines 43-54), which characteristically has a mobility of holes or electrons of 10^{-4} $cm^2/V*s$ or more (See for example Fig. 22 of Chen et al. in US 2004/0247937 as evidence of rubrenes characteristic mobility properties). Motivation to combine is the same as for claim 1.

Regarding claim 3, Suzuki further discloses wherein the ionization potential of the fluorescent material is a value lower by 0.1 eV or more than the ionization of the host material (Column 8, line 62 to Column 9, line 12).

Regarding claims 4 and 5, Suzuki further discloses wherein the invention of claim 1 is characterized in that the luminescent layer comprises a host material having a hole transport property and a host material having an electron transport property, having added thereto the fluorescent material as a guest material (Fig. 1, 4; Column 4, lines 46-64). Motivation to have transport materials additionally added as guest materials as in Hamada is the same as for claim 1.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6447934) (of record) in view of Hamada et al. (US 6387546) (of record) and Aziz et al. (US 6614175) and Eida (WO 2001/67824). Note that for purposes of citation, English language counterpart US 6995736 will be used.

Regarding claim 6, Suzuki teaches an organic EL panel comprising a hole injection layer (Fig. 1, 3; Column 4, lines 46-54); a luminescent layer (Fig. 1, 4; Column

4, lines 46-64), and an electron injection layer (Fig. 1, 5; Column 4, lines 46-64), wherein the hole injection layer, luminescent layer, and electron injection layer are stacked in this order (Fig. 1), and the luminescent layer comprises a host material of a transport material having added thereto a fluorescent material as a guest material (Column 5, lines 1-34). Suzuki fails to teach wherein a transport material added to the host as a guest material and wherein a hole transport layer and electron transport layer are positioned between their respective injection layers and the luminescent layer and wherein the host material of the luminescent layer comprises distyryl arylene or derivatives thereof and has a glass transition temperature of 85°C or higher.

In the same field of endeavor, Hamada teaches an OLED device with a layer including a host transport material with another transport material added to the host as a guest material in order to provide a layer with superior film stability and transport properties (Column 3, lines 58-67; Column 4, lines 32-48).

Further in the same field of endeavor, Aziz teaches wherein an OLED device with a mixed transport and fluorescent material luminescent layer further has electron transport and hole transport layers positioned between their respective injection layers in order to improve operational performance, improve device stability, and reduce the operating voltage (Fig. 4, 46 & 43 & 45; Column 12, lines 24-53; Column 13, lines 12-25).

In the same field of endeavor, Eida teaches a blue host material of a transport material for and OLED that has a distyryl arylene skeleton as a suitable blue emitting host material for a luminescent layer with dopants (Column 8, lines 44-54).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the invention of Suzuki by having a transport material added to the host as a guest material in order to provide a layer with superior film stability and transport properties, As disclosed by Hamada and to have a hole transport layer and electron transport layer are positioned between their respective injection layers and the luminescent layer in order to improve operational performance, improve device stability, and reduce the operating voltage, as disclosed by Aziz, and to further have the blue emitting host material with transporting properties for the host of the luminescent layer have a distyryl arylene skeleton, as disclosed by Eida, since it would have been obvious to one of ordinary skill in the art to use another blue emitting, hole transporting host material for the luminescent layer.

Regarding claim 7, Hamada further teaches wherein the transport material doped into the layer is rubrene (Column 22, lines 43-54), which characteristically has a mobility of holes or electrons of 10^{-4} $cm^2/V*s$ or more (See for example Fig. 22 of Chen et al. in US 2004/0247937 as evidence of rubrenes characteristic mobility properties). Motivation to combine is the same as for claim 6.

Regarding claim 8, Suzuki further discloses wherein the ionization potential of the fluorescent material is a value lower by 0.1 eV or more than the ionization of the host material (Column 8, line 62 to Column 9, line 12).

Regarding claims 9 and 10, Suzuki further discloses wherein the invention of claim 6 is characterized in that the luminescent layer comprises a host material having a

hole transport property and a host material having an electron transport property, having added thereto the fluorescent material as a guest material (Fig. 1, 4; Column 4, lines 46-64). Motivation to have like transport materials added to like host materials as guest materials as in Hamada is the same as for claim 6.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anne M Hines/
Patent Examiner
Art Unit 2879